

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 **Claim 1 (currently amended):** Work piece coated with
2 a system of film layers comprising at least one ~~of which~~
3 ~~is~~film composed of $(Al_yCr_{1-y})X$, where $X = N, C, B, CN, BN,$
4 $CBN, NO, CO, BO, CNO, BNO$ or $CBNO$ and $0.2 \leq y < 0.7$, with
5 the composition within said $(Al_yCr_{1-y})X$ film being either
6 essentially constant or varying over the thickness of the
7 $(Al_yCr_{1-y})X$ film continually or in steps, said work piece
8 constituting one of the following tools, specifically a
9 milling tool ~~and in particular of~~ a hob, (spherical-head)
10 ball nose mill, planar or profiling cutter, a clearing
11 tool, reamer, (indexable tip) insert for turning and
12 milling, a die or an injection mold.

1 **Claim 2 (currently amended):** Work piece coated with
2 a system of film layers comprising at least one ~~of which~~
3 ~~is~~film composed of $(Al_yCr_{1-y})X$, where $X = N, C, B, CN, BN,$
4 $CBN, NO, CO, BO, CNO, BNO$ or $CBNO$ and $0.2 \leq y < 0.7$, with
5 the composition within said $(Al_yCr_{1-y})X$ film being either
6 essentially constant or varying over the thickness of the
7 $(Al_yCr_{1-y})X$ film continually or in steps, said work piece

8 constituting a machine component.

1 **Claim 3 (currently amended):** Machine component as
2 in claim 2, ~~characterized in that~~wherein said component
3 is a sealing washer, a gear, a piston, a part of a valve
4 drive or a needle for an injection nozzle, or that it is
5 toothed.

1 **Claim 4 (currently amended):** Tool as in claim 1,
2 ~~characterized in that it~~wherein the tool is a forming
3 tool ~~and in particular~~of an upper die, a bottom swage, a
4 drawing die, an ejector core or a thread former.

1 **Claim 5 (currently amended):** Tool as in claim 1,
2 ~~characterized in that it~~wherein the tool is an
3 injection-molding tool for producing a molded plastic
4 part or a data storage medium.

1 **Claim 6 (currently amended):** Tool as in claim 1,
2 ~~characterized in that it~~wherein the tool features a CBN
3 or Cermet base unit or that ~~[[it]]~~the tool is a CBN or
4 Cermet (indexable tip) insert.

1 **Claim 7 (currently amended):** Work piece as in one

2 of the preceding claims, ~~characterized in that~~wherein the
3 $(Al_yCr_{1-y})X$ film has a cubic crystal structure.

1 **Claim 8 (currently amended):** Work piece as in one
2 of the ~~preceding claims, characterized in that the~~claims
3 1-6, wherein a rate of wear of the $(Al_yCr_{1-y})X$ film is less
4 than or equal to $1.5m^3m^{-1}N^{-1}10^{-15}$.

1 **Claim 9 (currently amended):** Work piece as in one
2 of the ~~preceding claims, characterized in that the~~claims
3 1-6, wherein a Vickers pyramid hardness of the $(Al_yCr_{1-y})X$
4 film is 2300 to 3100.

1 **Claim 10 (currently amended):** Work piece as in one
2 of the ~~preceding claims, characterized in that the~~claims
3 1-6, wherein a layer structure of the $(Al_yCr_{1-y})X$ film is
4 microcrystalline with an average grain size of 20 to 120
5 nm.

1 **Claim 11 (currently amended):** Work piece as in one
2 of the ~~preceding claims, characterized in that~~claims 1-6,
3 wherein a bonding layer is applied between the work piece
4 and the $(Al_yCr_{1-y})X$ film.

1 **Claim 12 (currently amended):** Work piece as in
2 claim 11, ~~characterized in that~~wherein said bonding layer
3 encompasses at least one of the metals of group IV, V or
4 subgroup VI, or aluminum.

1 **Claim 13 (currently amended):** Work piece as in
2 claim 11 ~~or 12, characterized in that~~wherein said bonding
3 layer includes at least one nitride, carbide or
4 carbonitride of one or several metals of subgroup IV, V
5 or VI.

1 **Claim 14 (currently amended):** Work piece as in ~~one~~
2 ~~of the preceding claims, characterized in that the~~
3 ~~minimum of~~claim 11, wherein at least one $(Al_yCr_{1-y})X$ film
4 is additionally coated with a slip layer.

1 **Claim 15 (currently amended):** Work piece as in
2 claim 14, ~~characterized in that~~wherein said slip layer
3 encompasses a carbide of at least one metal with
4 dispersed carbon, MeC/C, a diamond-like carbon layer, a
5 Si- or metallic diamond-like carbon layer, a MoS_x , a WS_x
6 or a titanium-containing MoS_x or MoW_x layer.

1 **Claim 16 (currently amended):** PVD process for

2 depositing at least one $(Al_yCr_{1-y})X$ film on a work piece,
3 where $X = N, C, B, CN, BN, CBN, NO, CO, BO, CNO, BNO,$
4 $CBNO$ and $0.2 \leq y < 0.7$, ~~whereby comprising the steps of~~
5 installing at least one work piece in a vacuum coating
6 system with at least one Al_zCr_{1-z} target, where
7 ~~[[0,25]]~~ $0.25 \leq z < 0.75$, ~~at least one work piece is~~
8 ~~installed and~~ operating said system is ~~operated~~ at a
9 pressure of 0.5 to 8 Pa with the addition of a nitrogen-,
10 carbon- boron- or oxygen-containing reactive gas and ~~the~~
11 ~~application~~ applying on the work piece of a substrate
12 voltage of between -3 and -150V, as an arc or sputtering
13 ~~source in such fashion that,~~ wherein the constituent
14 composition within the said ~~minimum of~~ at least one
15 $(Al_yCr_{1-y})X$ film is either essentially constant or varies
16 either continuously or in steps over the thickness of the
17 film.

1 Claim 17 (currently amended): PVD process as in
2 claim 16, ~~characterized in that~~ wherein $X = N$ and the
3 reactive gas is nitrogen or oxygen.

1 Claim 18 (currently amended): PVD process as in
2 ~~claims 16 and 17, characterized in that~~ claim 16 or 17,
3 wherein the substrate voltage is pulsed.

1 **Claim 19 (currently amended):** PVD process as in
2 ~~claims 16 to 18, characterized in that~~claim 16 or 17,
3 wherein the $\text{Al}_z\text{Cr}_{1-z}$ target is a powder-metallurgically
4 produced target.

1 **Claim 20 (currently amended):** PVD process as in
2 claim 19, ~~characterized by the use of a target~~wherein the
3 target is produced by cold-pressing starting material in
4 powder form with repeated subsequent reshaping, ~~for~~
5 ~~instance in a forge,~~ at temperatures under 660°C ,
6 densification by fluxing and cold fusion, and
7 transformation into its final state with a theoretical
8 density at about 96 to 100%.

1 **Claim 21 (currently amended):** Process for machining
2 a material, ~~characterized in that it~~wherein the process
3 involves the use of a tool per claim 1.

1 **Claim 22 (currently amended):** Process as in claim
2 21, ~~characterized in that~~wherein the machining is
3 performed without the addition of lubricants or cooling
4 agents.

1 **Claim 23 (currently amended):** Process as in ~~claims~~
2 ~~21 and 22, characterized in that~~claim 21 or 22, wherein
3 the tool is a hard-metal or HSS hob (cutter) and the
4 cutting speed is 60 to 450 m/min.

1 **Claim 24 (currently amended):** Process as in ~~claims~~
2 ~~21 and 22, characterized in that~~claim 21 or 22, wherein
3 the tool is an end-milling, (spherical-head)
4 ball-nose-mill or a roughing cutter.